CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

TECHNICAL ANALYSIS

ADMINISTRATIVE LIABILITY
COMPLAINT NO. R9-2008-0033

ISSUED TO

AMETEK INC.
FORMER AMETEK/KETEMA AEROSPACE MANUFACTURING FACILITY
790 GREENFIELD DRIVE, EL CAJON CALIFORNIA
San Diego County

FOR VIOLATION OF

CLEANUP AND ABATEMENT ORDER NO. R9-2002-201

This report was prepared under the direction of

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By
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September 2008

Alleged Violations

Violation No. 1 – Ametek, Inc. (Ametek) Failed to Report as Required by Directive No. 1 by properly complying with Directive 1e to Cleanup and Abatement Order No. R9-2002-201. Directive No. 1 to Cleanup and Abatement Order (CAO) No. R9-2002-201 provides that Ametek and S&K complete delineation of the extent of pollution and contamination caused by discharges of chlorinated solvents and other wastes from the Site at 790 Greenfield Drive in the City of El Cajon and submit a complete Delineation Report. Ametek and S&K failed to install and collect ground-water samples in accordance with Directive 1.e and failed to submit a complete Delineation Report by April 30, 2003 as required by Directive No. 1 of CAO R9-2002-201. A Notice of Violation was sent to Ametek and S&K by certified mail on July 15, 2003. The violation period began on May 1, 2003, and continues to the present. As of September 25, 2008, the total number of days of violation is 1,974 days.[1]

Violation No. 2 – Ametek Failed to Submit a Complete Feasibility Study Report as Required by Directive No. 3 to Cleanup and Abatement Order No. R9-2002-201. Directive No. 3 to Cleanup and Abatement Order No. R9-2002-201 provides that Ametek and S&K prepare a comprehensive and objective Feasibility Study Report of cleanup and abatement strategies for chlorinated solvents in ground water and for residual waste in soil at the Site. Ametek and S&K failed to submit a complete Feasibility Study Report by January 16, 2004 as required by Directive No. 3 of CAO R9-2002-201, as amended. A Notice of Violation was sent to Ametek and S&K by certified mail on February 2, 2004. The violation period began on January 17, 2004 and continues to the present. As of September 25, 2008, the total number of days of violation is 1,713 days.[2]

BACKGROUND

Site Ownership History

In 1954, California Aircraft Products purchased the property at 790 Greenfield Drive in the City of El Cajon, California. In 1964, California Aircraft Products changed its name to Straza Industries. Straza Industries was purchased by Ametek, Inc. in 1968, and became the Straza Division of Ametek. Ametek, like previous owners, used the Site to manufacture aircraft engine parts and assemblies. In 1988, Ametek was split into two separate independent publicly owned Companies – Ametek Inc. and Ketema Inc. Ketema Inc. subsequently changed its name to Schutte and Koerting, Inc. (S&K), and the facility was sold to Senior Flexonics, Inc. in 1998. S&K took lead responsibility for performing work related to CAO R9-2002-201 until they filed for bankruptcy liquidation in 2007.

[1] 1,974 days = May 1, 2003 - September 25, 2008
[2] 1,713 days = January 17, 2004 - September 25, 2008

Ametek and S&K are responsible for the violations of Cleanup & Abatement Order No. R9-2002-201. Ametek has recently taken the lead role in performing additional investigative work at the Site.

Waste Generation, Disposal, and Discharge

During the years that California Aircraft Products, Straza, and Ametek operated on the site, industrial wastes from the aerospace manufacturing operations were stored in an in-ground sump. The sump was installed by Straza Industries in 1963. The sump reportedly consisted of a 12 foot diameter hole in the ground with a concrete base at 10 feet below ground surface. Redwood planks were reportedly placed along the walls of the sump. This waste storage system was utilized until 1985. Reportedly, from about 1963 through 1985, the sump was used as storage containment to temporarily store up to 7,000 gallons of waste per month.[3] Waste generated during the manufacturing process and stored in the sump included: spent acid and alkaline solutions; industrial chlorinated solvents: including 1,1,1-Trichloroethane (1,1,1-TCA), Trichloroethylene (TCE), and Tetrachloroethylene (PCE); oils; paint thinner; and process sludge. Once the sump was full, a waste hauler was called to pump out the sump and haul the contents for disposal to an offsite facility.

Use of the sump as an impervious storage vessel was permitted by the Regional Board in 1963 under Resolution 63-R9. The Regional Board's adoption of Resolution 63-R9 was based on information in the Report of Waste Discharge (ROWD). The ROWD described their waste treatment facilities as being "covered with a rich capping to prevent filtering into native soil."[4] The sump design details were never presented in the ROWD. It wasn't until removal of the sump that it became obvious based on photographic evidence and field notes from the San Diego County Department of Environmental Health that the redwood planks were only placed directly into the ground along the walls of the circular sump. The construction design of the sump base was indeterminable based on the evidence in the Regional Board record.

Highly acidic liquid waste, spent chlorinated solvents, and appreciable amounts of various metallic wastes breached the sump and discharged to the soil surrounding the sump and to ground water. It wasn't until 1985 that Ametek ceased its discharge to the sump and began discharging its industrial waste stream to the sanitary sewer system. Over time, the strongly acidic liquid wastes discharged to the sump deteriorated the condition of the sump allowing waste to percolate into the soil substrate, into fractures in the granitic rock, and ultimately to the ground water. [5,6]

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[3] February 1, 1963 Report of Waste Discharge submitted by Straza Industries to the Regional Board in application for waste discharge requirements and February 7, 1963 letter providing detailed description of waste treatment and disposal.

[4] February 7, 1963 Letter from Straza Industries to Regional Board responding to the Board's request for additional information about their waste treatment and method of disposal.

[5] Scott Hugenberger, Regional Board Staff 8/30/88 notes – documenting his site visit during excavation of the sump and his observance of "water seeping up through a fracture" at the base of the excavation.

Basin Plan Water Quality

The Water Quality Control Plan for the San Diego Basin (9) prohibits the discharge of waste to waters of the state in a manner causing, or threatening to cause a condition of pollution, contamination, or nuisance as defined in California Water Code (CWC) section 13050.

In 1987, total chlorinated solvent concentrations in ground water near the former sump were detected at levels exceeding 810,000 parts per billion (ppb). As of December 2007, total chlorinated solvent concentrations in ground water remain at approximately 48,000 ppb[7]. Ametek and S&K's discharge caused a plume of TCE contaminated ground water at concentrations of 1,000 ppb to migrate approximately 7,000 feet (~1.3 miles) downgradient from the sump. The TCE plume is within approximately 2 miles of the San Diego River.

Table 1

Waste Constituent	Ground-Water Concentration [a] (ug/l)	Basin Plan Water Quality Objective (ug/l)
Tetrachloroethylene (PCE)	5,400	5
Trichloroethylene (TCE)	40,000	5
1,1-Dichloroethylene (1,1-DCE)	1,300	6
1,1,1 – Trichloroethane (1,1,1-TCA)	270	200
1,4 - Dioxane	800	3*

* California Department of Public Health advisory Notification Level (NL).
[a] Data from the December 2007 Groundwater Monitoring Report.

The discharge of waste at the Site has caused the presence of waste constituents in the ground water in concentrations exceeding applicable water quality objectives creating a condition of pollution and contamination in waters of the State. See Table 1. The adverse changes in ground-water quality caused by the release of wastes are interfering with the Municipal and Domestic Supply (MUN) and Agricultural Supply (AGR) designated beneficial uses, is potentially injurious to the public health, and can be considered an obstruction to the free use of property as provided in CWC section 13050(m).

[6] County of San Diego DEH notes (unknown author) listing chronology of documents and events in their file. "4/28/88- Granite lines the bottom of the pit".
[7] [(47,770 ppb VOCs = 270 ppb (1,1,1-TCA) + 1,300 (1,1-DCE) + 40,000 ppb (TCE) + 5,400 ppb (PCE) + 800 (1,4-Dioxane)] December 2007 Ground Water Monitoring Report.

CLEANUP AND ABATEMENT ORDER REQUIREMENT FOR DELINEATION

The Regional Board began requiring Ametek and S&K to define the horizontal and vertical extent of the waste 20 years ago. Over these last 20 years, Ametek and S&K failed to exercise reasonable care to present a consistent prudent approach to define, map, and cleanup the extent of their discharge. The Regional Board's record includes 20 separate documented occasions whereby Ametek and S&K were requested to delineate the plume, were required to delineate the plume, and/or were reminded that delineation was incomplete.

Ametek and S&K's failure to delineate the extent of their discharge severely impeded their ability to develop a complete Feasibility Study Report (Complaint Violation No. 2) and implement appropriate cleanup and abatement measures. Their failure to implement the CAO requirements and thereby fully delineate and cleanup the discharge has caused a sustained condition of pollution and contamination in ground water over a mile downgradient from their former facility.

The plume definitions for 1,1,1-TCA, TCE, 1,1-DCE, and 1,4-Dioxane submitted by Ametek and S&K are incomplete. The Regional Board staff informed Ametek and S&K that their delineation submittal was incomplete or deficient in that they failed to provide sufficient reliable data or analysis to support their conclusion that the plumes of TCE and 1,4-Dioxane were defined in the lateral and vertical direction.[8] The Regional Board staff continued to inform Ametek and S&K of the lack of delineation in subsequent semiannual and annual ground-water monitoring reports beginning with the first ground-water monitoring report (Fall 2002) submitted after the adoption of CAO R9-2002-201. The Regional Board staff provided detailed comments on the deficiencies with plume delineation of TCE, PCE, 1,1,1-TCA, and 1,4-Dioxane. There were so many deficiencies related to plume delineation accumulated between 2002 and 2007, that Regional Board staff's comment letter responding to the November 2006 Groundwater Monitoring Report included a 10 page spreadsheet of unaddressed issues.[9]

The unaddressed issues included comments about: the long distances between monitoring wells which make estimating the horizontal extent of the plume unreliable; long screen lengths (20 feet) in the wells which make vertical delineation impossible; and twenty foot well screens which are used to indicate the presence or absence of a contaminant but do not identify how contamination concentrations vary with depth. The estimated lateral and vertical extent of the 1,1,1,-TCA, TCE, 1,1-DCE, and 1,4-Dioxane plumes are described below. There are only 13 wells positioned down gradient of the former Ametek/Ketema Facility used to estimate the following plumes horizontal configurations. This is not an adequate number of wells to delineate a plume that is up to 7,000 feet long.

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[8] July 15, 2003 Letter from Regional Board to Ametek and S&K Subject: Notice of Violation No. R9-2003-271 and Investigative Order No. R9-2003-272.

[9] May 7, 2007 Regional Board comment letter on Ametek and S&K November 2006 Groundwater Monitoring Report

The Ametek and S&K discharge of waste has caused the largest TCE plume in the state of California, for which, cleanup has yet to be initiated. This TCE plume is the largest plume of its kind in the San Diego Region.

1,1,1-TCA: The estimated lateral extent of the 1,1,1-TCA waste plume is 1,200 feet long by 400 feet wide. This plume extends beneath approximately 11 acres[10] of land that comprises the former Ametek/Ketema Facility. The estimated lateral and vertical extent of the 1,1,1-TCA plume are unknown. See Appendix B – Maps

TCE: The estimated lateral extent of the TCE waste plume is 7,000 feet long by 1,600 feet wide. The TCE waste plume is the largest. This plume has migrated beneath approximately 257 acres of land.[11] Only one well is present to define the northeast side of the plume, an estimated distance of 5,500 feet. Large distances between well locations, ~3,400 feet between MW 21 and MW 23, make the plume extent estimates unreliable. Ametek and S&K have failed to define the TCE waste plume. See Appendix B – Maps.

1,1-DCE: The estimated lateral extent of the 1,1-DCE waste plume is 3,200 feet long by 1,200 feet wide. This plume has migrated beneath approximately 88 acres of land. The 1,1-DCE plume is the second largest plume to TCE. Only two wells are present to define the northeast side of the plume, an estimated distance of 5,000 feet. Large distances between well locations, ~2,000 feet between MW 13 and MW 21, make the plume extent estimates unreliable. Ametek and S&K have failed to define the 1,1-DCE waste plume. See Appendix B – Maps.

1,4-Dioxane: The estimated lateral extent of the 1,4-Dioxane waste plume is 5,600 feet long by 1,000 feet wide. This plume extends across 128 acres of land. The 1,4-Dioxane plume is as large as the 1,1-DCE plume and second only to TCE. Only two wells are present to define the northeast side of the plume, an estimated distance of 5,500 feet. Large distances between well locations, ~2,000 feet between MW 21 and MW 22, make the plume extent estimates unreliable. Ametek and S&K have failed to define the 1,4-Dioxane waste plume. See Appendix B – Maps.

Ametek and S&K were required to define the lateral extent of chlorinated solvent waste discharged to ground water in 1989.[12] In 20 years, they have failed to complete their delineation efforts for the 1,1,1-TCA, 1,1-DCE, TCE, and 1,4-Dioxane waste plumes. Additionally, plumes of PCE, 1,1-DCA, benzene, toluene, ethylbenzene, and xylene exist in ground water.[13] These waste plumes

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[10] Conversion factor for square feet per acre is 43,560 square feet per 1 acre.
[11] [(7,000 ft x 1,600 ft)/(5280 ft)^2]x640 acres = 257 acres
[12] June 26, 1989 Regional Board letter to Ketema RE: Groundwater Contamination at 790 Greenfield Drive, El Cajon.
[13] Based on the semiannual and annual ground water monitoring effort that has been in place during the 17 years (17 years = 1989 to 2006) of site investigation efforts.

have not been fully defined, mapped, or presented consistently in any of the ground-water monitoring reports.

Ametek & S&K's failure to completely delineate the plume has allowed significant concentrations of contaminants to remain in place as a continued source of pollution and contamination. Ametek and S&K failed to act appropriately, not only in their efforts to complete the delineation of the plume, but in their responsibilities to implement appropriate cleanup and abatement measures in a reasonable amount of time. Such failures have caused a condition of pollution and contamination in the ground water beneath the El Cajon Valley with continuing impacts to the existing beneficial uses of the Santee/El Monte Basin.

DETERMINATION OF ADMINISTRATIVE CIVIL LIABILITY

CWC section 13350(a) provides that, any person who (1) violates any cease and desist order or cleanup and abatement order hereafter issued, reissued, or amended by a Regional Board or the State Board, or (2) in violation of any waste discharge requirement, waiver condition, certification, or other order or prohibition issued, reissued, or amended by a Regional Board or the State Board, discharges waste, or causes or permits waste to be deposited where it is discharged, into the waters of the state shall be liable civilly, and remedies may be imposed in accordance with subdivisions (d) or (e).

Pursuant to CWC section 13350(e)(1)(A) "The state board or a regional board may impose civil liability administratively pursuant to Article 2.5 (commencing with section 13323) of Chapter 5 either on a daily basis or on a per gallon basis, but not both. (1) The civil liability on a daily basis may not exceed five thousand dollars ($5,000) for each day the violation occurs. (A) When there is a discharge, and a cleanup and abatement order is issued, except as provided in subdivision (f), the civil liability shall not be less than five hundred dollars ($500) for each day in which the discharge occurs and for each day the cleanup and abatement order is violated."

Factors to be considered in Determining the Amount of Administrative Civil Liability. Section 13327 of the CWC requires that the following factors be taken into consideration in determining the amount of civil liability:

- Nature, circumstance, extent, and gravity of the violation;
- Whether the discharge is susceptible to cleanup or abatement;
- Degree of toxicity of the discharge;
- The violator's ability to pay;
- The ability to continue in business;
- Voluntary cleanup efforts taken;
- Prior history of violations;
- Degree of culpability;
- Economic benefit or savings;
- Other matters as justice may require.

Detailed Analysis of Each Factor as it Applies to Each Allegation:

Violation No. 1. Failure to Report as Required by Directive No. 1 by properly complying with Directive 1e to Cleanup and Abatement Order No. R9-2002-201.

NATURE, CIRCUMSTANCE, EXTENT, AND GRAVITY OF VIOLATION

The discharge of waste by Ametek and S&K has caused one of the largest TCE plumes in size and concentration in the state of California, for which, cleanup has yet to be initiated. The TCE plume is the largest plume of its kind in the San Diego Region. There are other chlorinated solvent release sites in the San Diego Region similar in size and nature to the Ametek and S&K plume; however, delineation efforts were completed in a timely manner and remediation systems are in place. After 20 years of investigation efforts, Ametek and S&K have not installed a sufficient monitoring well network to delineate the vertical and horizontal extent of the waste plume and have not taken any efforts to cleanup and abate the effects of their discharge. Ametek and S&K are responsible for delineating and remediating the discharge of wastes.

Ametek and S&K failed to satisfy Directive No. 1 of CAO No. R9-2002-201 which required complete delineation of the extent of pollution caused by discharges of chlorinated solvents and other waste from the former Ametek/Ketema Site (Site). Complete delineation was not achieved because Ametek and S&K failed to comply with Directive No. 1.e. in that they failed to install monitoring wells at appropriate locations along the estimated plume perimeter and beyond the estimated plume terminus to identify with greater certainty the extent of ground-water pollution.

Ametek and S&K were repeatedly advised that their submittals regarding plume delineation were incomplete or deficient, yet they failed to conduct additional work to address the deficiencies. Ametek & S&K's failure to completely delineate the plume has allowed significant concentrations of contaminants to remain in place as a continued source of pollution. Ametek and S&K failed to act appropriately, not only in their efforts to complete the delineation of the plume, but in their responsibilities to implement appropriate cleanup and abatement measures in a reasonable amount of time. Such failures have caused a condition of pollution and contamination in the ground water beneath the El Cajon Valley with continuing impacts to the existing beneficial uses of the Santee/El Monte Basin.

In response to Directive No. 1.e of CAO R9-2002-201, Ametek and S&K conducted exploratory monitoring using Cone Penetrometer Test (CPT) technology near the estimated TCE plume perimeter and plume terminus. Twelve CPT locations were advanced. Three monitoring wells (Monitoring Wells 24 a&b and 25) were installed on the southwestern perimeter of the plume (see Figure 3 below).

CPT's 3, 4, and 6 were installed on the northern side of the TCE plume (See Figure 3 below) and CPT-9 on the south easterly side of the TCE plume. Ground-water data was not collected from these four test locations because the CPT device met refusal at shallow depths (from 6 to 9 feet bgs) at each of these locations. Ametek and S&K made no attempt to continue exploration at any of these locations. Ametek and S&K did not install monitoring wells to identify with greater certainty the extent of TCE ground-water pollution in these areas of the estimated plume perimeter. Therefore, Ametek and S&K failed to comply with Directive No. 1.e.

Ametek and S&K conducted exploratory sampling using CPT technology along the estimated plume axis. CPT 1, 10, 11, and 12 were advanced near the estimated plume terminus. Ground-water sample results indicated that TCE concentrations in CPT-1 increased with depth. TCE concentrations were 850 parts per billion (ppb) at 16-19 feet below ground surface (bgs) and 950 ppb at 21-24 feet bgs.[14] Contaminant concentrations increased with depth; therefore, the vertical extent of the TCE pollution plume is still unknown. Ametek and S&K did not install monitoring wells to identify with greater certainty the extent of TCE ground-water pollution in this area of the estimated plume terminus. Therefore, Ametek and S&K failed to comply with Directive No. 1e.

CPTs are not monitoring wells. CPTs are temporary ground-water sampling locations for a one-time ground-water grab sample. Contaminant concentration data collected from CPTs are used to determine a location for permanent

[14] Basin Plan Water Quality Objective for TCE is 5 ppb. Water Quality Objectives are the limits or levels of water quality constituents, established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area. CWC section 13050(h).

ground-water monitoring wells. Directive No. 1d required installation of between 2 and 6 permanent ground-water monitoring wells. Jon Wactor, attorney for S&K called Regional Board staff, John Anderson, to discuss the approach for locating and installing additional wells in January 2003. As a follow-up to their phone conversation, Regional Board staff emailed Jon Wactor explaining that the requirement (Directive 1d) behind installation of the "2 to 6 additional wells" was predicated on the fact that through the efforts to locate existing wells within 250 feet of the assumed plume boundary that fewer wells would be necessary to further define the extent of the plume. Since, only one existing well (Ace Towing) was found (outcome of Directive 1d) and that the utility of that well for delineation purposes would be marginal at best, then more wells would be needed (e.g. 6 instead of 2). To that end, the Regional Board staff informed Ametek and S&K that 6 wells would be the minimum."[15] Jon Wactor disagreed with Regional Board staff's assertion, stating that the order "speaks for itself" requiring installation of between 2 and 6 wells to complete delineation, 6 being the maximum. Regional Board staff responded once more further clarifying that the order does not state that "2 to 6 wells will necessarily complete delineation that staff would have to review the results from ground-water sampling to determine if the well locations have met the goal of complete delineation."[16]

Three wells were installed, Monitoring Well (MW) 24 a and b (clustered wells) and MW 25 (see Appendix B). Since installation of MW-24 a&b (one of the furthest downgradient monitoring wells) contaminant concentrations have continuously increased from not detected at <2 ppb to 41 ppb in MW-24a and from not detected at <2 ppb to 7.4 ppb in MW-24b. Contaminant concentrations in MW-24 a&b at installation in March 2003 were not detected. At the very next sampling event in November 2003, the TCE concentration in MW-24a was 11 ppb. TCE concentrations in ground water have continually increased in MW- 24 a&b since the wells were installed. Additionally, MW-23 (the other furthest downgradient monitoring well) shows a consistent increase in TCE and 1,4-Dioxane concentrations. TCE concentrations in MW-23, at well installation on March 26, 1998, were not detected at <2 ppb. TCE concentrations in MW-23 during the most recent March 2008 sampling is 20 ppb. 1,4-Dioxane concentrations in MW-23, first sampled on March 26, 2002, was not detected at <1 ppb. 1,4-Dioxane concentrations in MW-23 during the most recent March 2008 sampling event were 5.3 ppb. Contaminant concentrations in the furthest downgradient monitoring wells are increasing over time. Ametek and S&K failed to install additional monitoring wells at appropriate locations beyond the estimated plume terminus to identify with greater certainty the extent of ground-water pollution. Ametek and S&K have not complied with Directive No. 1.e of CAO R9-2002-201.

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[15] CPT Proposal Exchange of Emails between John Anderson, Regional Board staff and Jon Wactor, attorney for S&K with Wactor and Wick LLC. Emails began on January 14, 2003 ending January 21, 2003.

[16] Ibid - January 21, 2003 email correspondence from John Anderson.

The horizontal and vertical extent of pollution from the former Ametek/Ketema Site remains undefined. Ametek and S&K have caused or permitted and continues to cause or permit significant amounts of chlorinated solvent waste to remain in place for 20 years (1988 to 2008 and continuing) without cleanup or abating the condition of pollution. The plume of chlorinated solvent waste has migrated beneath Magnolia Elementary School, single family and multi-unit residential homes, mobile homes, light industrial businesses, and the County of San Diego Gillespie Field Airport over a mile downgradient from the former Site.

The chlorinated solvent and other wastes left in place in ground water beneath the former Ametek/Ketema facility (currently occupied by Senior Flexonics) contain pollutants exceeding hazardous and toxic levels.[17] The County of San Diego Department of Environmental Health has denied people of the State of California the ability to install ground-water wells on their property due to the presence of the plume of waste.[18] Additionally, the San Diego County Water Authority has expressed concern that the plume of waste caused by Ametek and S&K is not being investigated in a timely manner which increases the potential for migration of contamination into the downgradient aquifer where ground-water reuse projects are in effect.[19]

SUSCEPTIBILITY TO CLEANUP AND ABATEMENT

This factor does not apply directly to this violation. However, the discharges are clearly susceptible to cleanup and abatement.

DEGREE OF TOXICITY

While this factor may not apply directly to the failure to fully delineate, the violation has led to the spread of contaminants that are highly toxic if digested or inhaled.[20]

ABILITY TO PAY AND ABILITY TO CONTINUE IN BUSINESS

Ametek Inc.

Ametek is a global manufacturer of electronic instruments and electric motors with $2.5 billion in annual sales. They have 10,000 employees worldwide and are the world's largest manufacturer of air-moving electric motors for the floor care industry and a leader in brushless air-moving motors for aerospace, business machine, mass transit, medical, and computer markets. Ametek has 70 manufacturing plants and more than 70 sales and service centers in the United States and over 30 other countries around the world. Ametek has been traded

[17] www.atsdr.cdc.gov for ToxFAQs, Public Health, and Medical Management Guidelines
[18] August 23, 2004 San Diego County Department of Environmental Health Land and Water Quality Division Fax and Memo from Kevin Heaton to Laurie Walsh Regional Board staff.
[19] October 4, 1999 email from Dan Diehr, San Diego County Water Authority Staff RE: Regional Board October 13, 1999 Status Report.
[20] www.atsdr.cdc.gov for ToxFAQs, Public Health, and Medical Management Guidelines

on the New York Stock Exchange since 1930.[21] According to Dunn & Bradstreet, Ametek Inc. has a net worth of $966,672,000 reported in March 2008.

Ametek and S&K are jointly and severally liable for the requirements of CAO R9-2002-201, as amended.

Schutte & Koerting Inc.

Schutte & Koerting Inc. (S&K) filed bankruptcy liquidation in June 2007. However, it is possible to submit a claim in bankruptcy for liabilities to the Regional Board and to Ametek, if any, related to these violations of the California Water Code.

VOLUNTARY CLEANUP EFFORTS TAKEN

Ametek Inc. removed the disposal sump and 190 cubic yards of contaminated soil in 1987 under the direction of the County of San Diego Department of Environmental Health with input from the Regional Board. No additional cleanup of soil containing chlorinated solvent waste or ground-water cleanup has occurred in approximately 20 years (1988 to 2008).

PRIOR HISTORY OF VIOLATIONS

Failure to Submit a Complete Feasibility Study Report as Required by Directive No. 3 of Cleanup and Abatement Order No. R9-2002-201.

Ametek and S&K failed to submit a complete Feasibility Study Report as required under Directive No. 3 of Cleanup and Abatement Order No. R9-2002-201. The Regional Board issued Ametek and S&K Notice of Violation No. R9-2004-0045 on February 2, 2004.

DEGREE OF CULPABILITY

Ametek and S&K's accountability for the discharge of solvent wastes and for cleaning up or abating the effects of the discharge is undisputed. The CWC section 13304 contains the cleanup and abatement authority for the Regional Board. Section 13304(a) provides, in relevant part, that the Regional Board may issue a cleanup and abatement order to any person "who has discharged or discharges waste into the waters of the state in violation of any waste discharge requirements... ...or who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance..." This section authorizes Regional Boards to require complete cleanup of all waste discharged and restoration of affected water to background conditions (i.e., the water quality that existed before the discharge).[22]

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[21] www.ametek.com September 17, 2008

[22] Finding 4 of State Water Resources Control Board Resolution 92-49, *Policies And Procedures For Investigation And Cleanup And Abatement Of Discharges Under Water Code Section 13304*, (As Amended on April 21, 1994 and October 2, 1996).

It is also undisputed that Ametek and S&K are responsible for determining the source, nature, and extent of the discharge with sufficient detail to provide the basis for decisions regarding subsequent cleanup and abatement actions, if any are determined by the Regional Board, to be necessary. In order to clean up and abate the effects of a discharge or threat of a discharge, a discharger may be required to perform an investigation to define the nature and extent of the discharge or threatened discharge and to develop appropriate cleanup and abatement measures. CWC section 13267 provides that the Regional Board may require dischargers, past dischargers, or suspected dischargers to furnish those technical or monitoring reports as the Regional Board may specify, provided that the burden, including costs, of these reports, bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

Ametek and S&K are responsible for failing to complete the horizontal and vertical delineation efforts to define the extent of the discharge of chlorinated solvent and other wastes. The record shows that between the years 1988 and 2008 Ametek and S&K, either separately or jointly, were requested or directed on numerous occasions[23] to define the nature and extent of the discharge of waste with sufficient detail to provide the basis for decisions regarding subsequent cleanup and abatement actions. Ametek and S&K, whose actions have caused, permitted, or threaten to cause or permit conditions of pollution, have attempted to avoid their responsibilities for investigation and cleanup through delays, obfuscation, inadequate submittals, and outright refusal to comply with the requirements of the Regional Board. Ametek and S&K are responsible for delineating and remediating the plume.

ECONOMIC SAVINGS

Ametek and S&K have realized economic savings by not installing monitoring wells in appropriate locations along the estimated plume perimeter and beyond the plume terminus. The financial savings realized by Ametek and S&K are substantial considering the nature of the discharge, and the extent of the contaminant plume (~ 1 mile long and ¼ mile wide, avg. depth unknown).

The discharge was discovered in 1987. Twenty years later, the extent of the contaminant plume is still not defined. Ametek and S&K exacerbated the delineation task by delaying investigation of the discharge, allowing more time for the contaminants to migrate. Responsible parties at comparable sites typically spend 5 years to conduct comprehensive investigations with costs on the order of $3,000,000 to $8,000,000.[24] Comprehensive investigations include costs associated with work plans, project management, field work, permit fees, well

[23] Regional Board record includes 20 separate documented occasions from 1989 to present whereby Ametek and S&K were requested to delineate the plume, were required to delineate the plume, and/or were reminded that delineation was incomplete.
[24] Hill Air Force Base, Utah Estimated Remedial Investigation Costs

drilling and development, labor for drillers, disposal fees, ground-water monitoring, laboratory analysis, and overhead/contingency factors.

Cost of avoiding a comprehensive delineation effort at this Site is estimated at approximately $1,124,700.[25] This estimated cost of avoidance includes the estimated costs typically associated with previously listed tasks. The Regional Board acknowledges that conceptual designs for a delineation effort can vary, but know from other release sites of this nature that the magnititude of the estimated economic benefit is reasonable and conservative. It should be noted that this cost of avoidance is only for failing to completely define the horizontal and vertical extent of the discharge in soil and ground water and does not take into account the economic savings for avoiding initiating remediation of the impacts to the water resource from the discharge. Actions to remove contaminants from ground water at this site have never been taken.

OTHER MATTERS AS JUSTICE MAY REQUIRE

No action has been taken at the Site to clean up the discharge of waste since Ametek discovered the plume 20 years ago. As a result, the plume of chlorinated solvents impacts the beneficial uses of the ground-water resource. A public elementary school is located downgradient of the site and has been the subject of regulation by the Department of Toxic Substances Control related to discharges from the site.

Staff costs, since April 2007, for regulator oversight at the former Ketema Facility have not been paid. One hundred eight thousand three hundred fifty-two dollars and thirty-four cents ($108,352.34) is owed for regulatory oversight costs through June 30, 2008.

Violation No. 2. Failure to Submit a Complete Feasibility Study Report as Required by Directive No. 3 of Cleanup and Abatement Order No. R9-2002-201.

NATURE, CIRCUMSTANCE, EXTENT, AND GRAVITY OF VIOLATION

Ametek Inc. (Ametek) and Schutte & Koerting Inc. (S&K) failed to submit a Feasibility Study Report as required by Directive No. 3 of Cleanup and Abatement Order (CAO) No. R9-2002-201.[26] The Regional Board issued a Notice of Violation to Ametek and S&K for failure to submit the Feasibility Study Report on February 2, 2004.[27] Ametek and S&K's failure to submit a complete Feasibility Study Report has stalled the progress towards selection of a feasible cleanup technology for this release for 4 years.

[25] Appendix A - Economic Excel spreadsheet dated September 2008, prepared by Laurie Walsh, Water Resource Control Engineer, San Diego Regional Board
[26] Regional Board CAO R9-2002-201
[27] Regional Board NOV R9-2004-0045

The Regional Board issued CAO No. R9-2002-201 on September 19, 2002. Directive No. 3 of CAO No. R9-2002-201 required Ametek and S&K to submit a Feasibility Study Report. A feasibility study is the analysis where Ametek and S&K evaluate relevant cleanup technologies against a set of criteria and propose a preferred remedial action to cleanup the waste discharged to waters of the State from their former operations. Without a complete and comprehensive feasibility analysis, appropriate cleanup of the waste beneath the former Ametek/Ketema Site and the plume cannot progress.

At the request of Ametek and S&K, the Regional Board amended the due date for the Feasibility Study Report. Addendum No. 1 to CAO R9-2002-201 was necessary in order to allow Ametek and S&K sufficient time to evaluate the human health risk assessment results[28] and incorporate them into preparation of a feasibility study. Addendum No. 1 to CAO R9-2002-201 extended the due date for submittal of the Feasibility Study Report from October 8, 2003 to January 16, 2004 (~100 days). Ametek and S&K failed to submit the Feasibility Study Report by January 16, 2004, therefore the Regional Board issued Notice of Violation (NOV) No. R9-2004-0045. NOV R9-2004-0045 was issued in order to put Ametek and S&K on notice that they were in violation of CAO R9-2002-201 for failing to submit a Feasibility Study Report to the Regional Board. Ametek and S&K claimed that "the Regional Board made the submission of a meaningful revised feasibility study impossible when the Regional Board disapproved the delineation report."[29] The Regional Board responded and identified several occasions where Regional Board staff met with Ametek and S&K's consultants to discuss the ways by which they could provide sufficient, meaningful data and analysis to continue to delineate the extent of the plume while preparing the Feasibility Study Report for submittal by January 16, 2004. The Regional Board rejected Ametek and S&K's claim that it was the Regional Board's fault that Ametek and S&K could not submit a Feasibility Study Report. The Regional Board explained that "Any adjustments necessary to address the results of the completed delineation or of the human health risk assessment required by Investigative Order No. R9-2003-272, could have been addressed in the Feasibility Study Report by identifying how the results of ongoing investigation might be expected to affect various cleanup or abatement alternatives and by noting the need for supplementary work on the FS to accommodate the results of ongoing investigation."[30] The Regional Board also clearly reiterated it would not further extend the due date for the Feasibility Study Report and it would not withdraw Notice of Violation R9-2003-271[31] issued to Ametek and S&K for failure to submit an adequate Plume Delineation Report. It had been a year and half since CAO R9-2002-201 was issued and Ametek and S&K were no closer to

[28] Required under Investigative Order No. R9-2003-272. Investigative Order R90-2003-272 required S&K and Ametek to conduct a human health risk assessment at the former Ametek/Ketema Facility.
[29] Wactor and Wick February 12, 2004 letter
[30] Regional Board March 24, 2004 letter
[31] Regional Board NOV R9-2003-271

submitting an adequate Feasibility Study Report than they were in 1996 when the Regional Board issued Ametek and Ketema (now S&K) the original Cleanup and Abatement Order No. 98-11.[32]

Ametek and S&K have not submitted a complete feasibility analysis rendering it impossible to select an appropriate, cleanup method for waste that remains beneath the former Ametek/Ketema Facility and the plume that extends over a mile downgradient. Ametek and S&K are responsible for preparation and submittal of a Feasibility Study Report.

The pollution plume caused by Ametek and S&K's discharge is the largest of its kind in the San Diego Region measuring over one mile long (~7,000 feet) by ¼ mile wide (~ 1,600 feet). This plume is one of the largest TCE plume in size and concentration in the state of California, for which, no ground-water cleanup has occurred. Ametek and S&K have never initiated any interim remedial action other than the initial removal of 190 yards of contaminated soil from the source area in 1987. The plume is in the El Cajon basin where ground water has been designated for use as a domestic or municipal water supply source and agricultural supply source. Basins designated as domestic or municipal supply sources shall not contain concentrations of pollutants in excess of the maximum contaminant levels (MCLs) established in the California Code of Regulations, Title 22.[33] Ametek and S&K's failure to clean up their discharge of waste has caused concentrations of pollutants to remain in ground water in excess of the MCLs for, at least, twenty-one years (1987 to 2008). By failing to submit a Feasibility Study Report, and selecting a remedial technology cleanup is impossible. Ametek and S&K's failure to analyze relevant and appropriate remedial alternatives has exacerbated the condition of ground-water pollution. As a direct cause of Ametek's and S&K's failure to analyze appropriate cleanup alternatives and initiate cleanup, the people of the State of California have been denied the ability to beneficially use ground water for the last 20 years and been potentially exposed to risks associated with exposure to volatile organic compounds.

SUSCEPTIBILITY TO CLEANUP OR ABATEMENT

This factor does not apply directly to this violation. However, the discharges are clearly susceptible to cleanup and abatement.

DEGREE OF TOXICITY OF THE DISCHARGE

While this factor may not apply directly to the failure to submit a Feasibility Study Report, the violation has led to the spread of contaminants that are highly toxic if digested or inhaled.[34]

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[32] Regional Board CAO 98-11
[33] Water Quality Control Plan San Diego Basin 1994, as amended
[34] www.atsdr.cdc.gov for ToxFAQs, Public Health, and Medical Management Guidelines

ABILITY TO PAY AND ABILITY TO CONTINUE IN BUSINESS

Ametek Inc.

Ametek is a global manufacturer of electronic instruments and electric motors with $2.5 billion in annual sales. They have 10,000 employees worldwide and are the world largest manufacturer of air-moving electric motors for the floor care industry and a leader in brushless air-moving motors for aerospace, business machine, mass transit, medical, and computer markets. Ametek has 70 manufacturing plants and more than 70 sales and service centers in the United States and over 30 other countries around the world. Ametek has been traded on the New York Stock Exchange since 1930.[35] According to Dunn & Bradstreet, Ametek Inc. has a net worth of $966,672,000 reported in March 2008.

Ametek and S&K are jointly and severally liable for the requirements of CAO R9-2002-201, as amended.

Schutte & Koerting Inc.

Schutte & Koerting Inc. (S&K) filed bankruptcy liquidation in June 2007. However, it is possible to submit a claim in bankruptcy for the penalties related to these violations of the California Water Code.

VOLUNTARY CLEANUP EFFORTS TAKEN

Ametek Inc. removed the sump and 190 cubic yards of contaminated soil in 1987 under the direction of the County of San Diego Department of Environmental Health with input from the Regional Board. No ground-water cleanup has occurred in approximately 20 years (1988 to 2008). No additional cleanup of soil containing chlorinated solvent waste or ground-water remediation has occurred in approximately 20 years.

PRIOR HISTORY OF VIOLATIONS

Violation of Directive No. 1 CAO R9-2002-201. Failed to Report as Required by Directive No. 1 by properly complying with Directive 1e to Cleanup and Abatement Order No. R9-2002-201. Ametek and S&K failed to submit a complete Delineation Report as required under Directive No. 1 of Cleanup and Abatement Order No. R9-2002-201. Ametek and S&K submitted a report entitled "Delineation of Halogenated Volatile Organic Compounds in Ground Water" (Report) prepared by Geomatrix Consultants, which was received on April 30, 2003. The report failed to provide sufficient reliable data or analysis to support the conclusion that "the lateral extent of TCE in groundwater has been delineated" and did not satisfy Directive No. 1 of CAO No. R9-2002-201 requiring Ametek and S&K to complete delineation of the extent of pollution and contamination caused by discharges of chlorinated solvents and other waste from the former Ametek Site (Site) by April 30, 2003. The Regional Board issued Ametek and S&K Notice of Violation No. R9-2003-271 with supporting Technical Memorandum on July 15, 2003.

[35] www.ametek.com September 17, 2008

DEGREE OF CULPABILITY

Cleanup and Abatement Order No. R9-2002-201 was issued to Ametek and S&K on September 19, 2002 and amended on August 19, 2003. Directive No. 3 of Addendum No. 1 to CAO 2002-201 requires Ametek and S&K to submit a complete Feasibility Study Report by January 16, 2004. Ametek and S&K did not challenge the issuance of CAO R9-2002-201 at the time the Regional Board Executive Officer issued it or any time thereafter during any of the Amendments. Ametek and S&K, whose actions have caused, permitted, or threaten to cause or permit conditions of pollution, have attempted to avoid their responsibilities for submittal of a complete Feasibility Study Report through delays, obfuscation, inadequate submittals, and outright refusal to comply with the requirements of the Regional Board. Ametek and S&K bear sole responsibility for failing to complete the Feasibility Study Report at the Site. Ametek and S&K remain responsible for submitting a complete Feasibility Study Report.

ECONOMIC SAVINGS

While Ametek and S&K's financial savings for failing to submit a Feasibility Study Report are relatively minor, their failure to conduct the feasibility study and their persistent reliance on attenuation has significantly delayed and deferred the costs of remediation. Feasibility studies can cost, on average, $50,000 to $100,000 for a site with similar complexities. Ametek and S&K failed, over the past 20 years, to evaluate remedial alternatives appropriate for remediating a release of this nature. By delaying the feasibility study analysis Ametek and S&K delayed cleanup allowing waste to migrate, further degrading the ground-water resource under nearly 257 acres of land.

The cost of avoiding preparation of a comprehensive Feasibility Study Report at this Site is estimated at approximately $50,000.[36] This cost of avoidance is only for failing to complete a comprehensive Feasibility Study Report and does not include costs associated with complete delineation of the horizontal and vertical extent of the discharge in soil and ground water and does not take into account the economic savings for avoiding initiating interim remedial action or full-scale remediation of the impacts to the water resource from the discharge.

OTHER MATTERS AS JUSTICE MAY REQUIRE

No action has been taken at the Site to clean up the discharge of waste since Ametek and S&K discovered the plume 20 years ago. As a result the plume of chlorinated solvents impacts the beneficial uses of the ground-water resource.

Staff costs, since April 2007, for regulator oversight at the former Ketema Facility have not been paid. One hundred eight thousand three hundred fifty-two dollars and thirty-four cents ($108,352.34) is owed for regulatory oversight costs through June 30, 2008.

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[36] Appendix A - Economic Excel spreadsheet dated September 2008, prepared by Laurie Walsh, Water Resource Control Engineer, San Diego Regional Board

PROPOSED CIVIL LIABILITY

The proposed civil liability in this matter is two million two hundred sixty-nine thousand dollars $2,269,000. The liability attributed to each violation was determined by taking into consideration the factors listed in Water Code Section 13327. Therefore, liability is calculated on a per day basis and is substantially less than the statutory maximum ($18,835,000) for both violations. The proposed civil liability is appropriate for these violations for the following reasons:

1. The discharge of waste significantly polluted ground water within the El Cajon Valley causing sustained impacts to the beneficial uses of the ground water resource.
2. The discharge of waste to ground water is generating soil vapor that may be toxic to human health if inhaled.
3. This discharge of waste caused the largest plume of contamination in the State of California for which cleanup has yet to be initiated.
4. The County of San Diego Department of Environmental Health has denied people of the State of California the ability to install ground-water wells on their property due to the sustained presence of this waste plume.
5. The San Diego County Water Authority has expressed concern regarding future ground-water reuse projects due to the sustained presence of and lack of cleanup to the waste plume.
6. No action has been taken at the Site to cleanup the discharge of waste since Ametek discovered the plume 20 years ago.